I claim:

1. A method of producing diversity-encoded spread-spectrum signals comprising:

generating at least one wideband signal,

coupling an information signal onto the at least one wideband signal to produce at least one spread-spectrum signal,

duplicating the spread-spectrum signal to generate a plurality of spread-spectrum signals, and

diversity-encoding at least one of the spread-spectrum signals.

2. The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 wherein the wideband signal is a noise signal.
3. The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 wherein the step of coupling an information signal onto the at least one wideband signal includes modulating the at least one wideband signal with the information signal.
4. The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 wherein the step of diversity encoding is performed by a communication channel.
5. The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 wherein the step of diversity encoding includes at least one item of a set of providing a time offset, polarizing, applying a predetermined directionality, transmitting from a plurality of spatially separated transmitters, modulating with a predetermined carrier frequency, combining with a carrier having a predetermined mode, and transmitting the spread–spectrum signals in at least one predetermined subspace channel.
6. The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 further comprising a step of modulating the spread-spectrum signals onto a carrier signal.
7. The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 further comprising a step of coupling the spread-spectrum signals into a communication channel.
8. A method of producing diversity-encoded spread-spectrum signals comprising:

generating at least one information-bearing wideband signal,

generating at least one decoding signal, and

diversity-encoding at least one of the information-bearing wideband signal and the decoding signal.

9. The method of producing diversity-encoded spread-spectrum signals recited in Claim 8 wherein the wideband signal includes a noise signal.

10. The method of producing diversity-encoded spread-spectrum signals recited in Claim 8 wherein the step of diversity encoding is performed by at least one of a set comprising a communication channel, a transmitter, and a receiver.

11. The method of producing diversity-encoded spread-spectrum signals recited in Claim 8 wherein the step of diversity encoding includes at least one item of a set of providing a time offset, polarizing, applying a predetermined directionality, transmitting from a plurality of spatially separated transmitters, modulating with a predetermined carrier frequency, combining with a carrier having a predetermined mode, and transmitting the signals in at least one predetermined subspace channel.

12. The method of producing diversity-encoded spread-spectrum signals recited in Claim 8 further comprising a step of modulating the information-bearing wideband signal and the decoding signal onto a carrier signal.

13. The method of producing diversity-encoded spread-spectrum signals recited in Claim 8 further comprising a step of coupling the information-bearing wideband signal and the decoding signal into a communication channel.

14. A method of extracting information signals from a plurality of received spread-spectrum signals comprising:

receiving the spread-spectrum signals, at least one of the spread-spectrum signals being a diversity-encoded spread-spectrum signal,

decoding at least one of the diversity-encoded signals, and

correlating the decoded signal with at least one of the spread-spectrum signals to produce a correlation signal that is indicative of information encoded in the spread-spectrum signals.

15. A method of extracting information signals from a plurality of received spread-spectrum signals comprising:

receiving the spread-spectrum signals and at least one spectrum-decoding signal, at least one of the spread-spectrum signals and the spectrum-decoding signal being a diversity-encoded signal,

decoding at least one of the diversity-encoded signals to provide at least one diversity-decoded signal, and

correlating the diversity-decoded signal with at least one of the spread-spectrum signals and the spectrum-decoding signal to produce a correlation signal that is indicative of information encoded in the spread-spectrum signals.

16. A spread-spectrum transmitter for transmitting spectrum-coded, diversity-coded signals, the transmitter comprising:

a wideband-signal generator for generating at least one wideband signal,

an information signal generator for generating at least one information signal,

a modulator coupled to the wideband signal generator and the information signal generator for combining at least one information signal with at least one wideband signal for generating at least one spread-spectrum signal,

a diversity processor for duplicating the at least one spread-spectrum signal to provide a plurality of duplicate spread-spectrum signals and adjusting at least one diversity parameter of at least one of the duplicate spread-spectrum signals to enable separation of the adjusted signal from the at least one unadjusted signal.

17. A spread-spectrum transmitter for transmitting spectrum-coded, diversity-coded signals, the transmitter comprising:

a wideband-signal generator for generating at least one wideband signal,

an information signal generator for generating at least one information signal,

a modulator coupled to the wideband signal generator and the information signal generator for combining at least one information signal with at least one wideband signal for generating at least one spread-spectrum signal,

a diversity processor for adjusting at least one diversity parameter of at least one of the spread-spectrum signal and the wideband signal to enable separation of the adjusted signal from the at least one unadjusted signals.

18. A spread-spectrum receiver for extracting an information signal from a plurality of spectrum-coded, diversity-coded signals, the receiver comprising:

a receiving system for receiving the spectrum-coded, diversity-coded signals,

a diversity processor coupled to the receiving system for diversity decoding at least one of the received signals to provide a plurality of signals that are highly correlated, and

a signal combiner coupled to the diversity processor for correlating or otherwise combining the plurality of highly correlated signals to generate a correlation signal indicative of the information signal.

19. A spread-spectrum receiver for extracting an information signal from at least one spectrum-coded, diversity-coded signal, the receiver comprising:

a receiving system for receiving the at least one spectrum-coded, diversity-coded signal and receiving at least one despreading signal, the received despreading signal being separable from the at least one spectrum-coded signal,

a diversity processor coupled to the receiving system for diversity decoding at least one of the received signals to generate a plurality of signals that are highly correlated, and

a signal combiner coupled to the diversity processor for correlating or otherwise combining the plurality of highly correlated signals to generate a correlation signal indicative of the information signal.